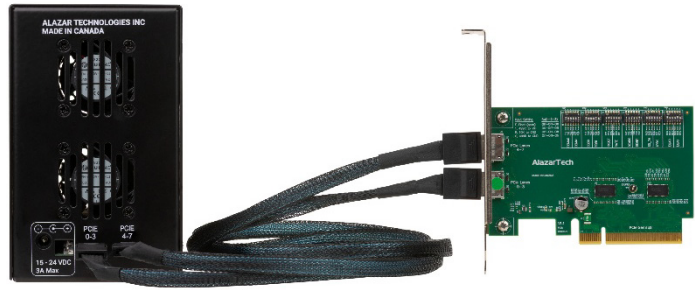# ATSRM3801
PCIe Expansion System

- Connect PCIe slot to external backplane

- Supports up to PCIe Gen 3 x8

- No loss of data throughput rate

- Extends the life of your AlazarTech digitizer

- Also available without enclosure for integration into an OEM's system.

Overview

AlazarTech ATS®RM3801 is a compact single-slot Gen 3 x8 PCIe Expansion System that enables users to connect a motherboard slot to an external backplane.

The ATSRM3801 is connected to the included AlazarTech ATS®P2C3x8 adapter, which is installed in a Gen 3 x8 PCIe expansion slot in the host computer's motherboard. This connection is made with two provided OCuLink cables.

The power supply inside the ATSRM3801 is turned on/off by the host computer's power switch.

ATSRM3801 was designed as a solution for customers who experience thermal issues in their waveform digitizer setup. With the increased use of high-powered GPUs and the tight spacing of PCIe expansion slots on motherboards, improving airflow is not straightforward. In some cases, this can cause dangerously high temperatures inside the chassis, which can cause irreparable damage to the waveform digitizer card.

The ATSRM3801 allows users to move their AlazarTech PCIe Gen 1, Gen 2, or Gen 3 x8 digitizer out of the hot environment of the host computer without affecting the functionality or data throughput rate of the digitizer.

PCI Express Bus Interface

ATSRM3801 interfaces to the host computer via two provided OCuLink cables that are connected to the ATSP2C3x8 adapter installed in the host computer.

The ATSRM3801 uses 8 Gbps transceivers that provide the PCIe Gen 3 x8 data transfer rate. These transceivers also support 5 Gbps (PCIe Gen 2) and 2.5 Gbps (PCIe Gen 1).

OEM Model

An OEM model of ATSRM3801 is also available (order number ATS-RM3801-101). It comes without the enclosure so that it can be mounted inside an OEM's system.

It includes the ATSRM3801 backplane, the ATSP2C3x8 adapter, and two OCuLink cables.

Note: OEMs are responsible for providing necessary cooling for the AlazarTech digitizer.

Recommended AC-DC Power Supply

Users must supply the necessary power to the ATSRM3801 PCIe expansion system for it to operate.

In order to obtain safety certification for the ATSRM3801, AlazarTech cannot include a power supply. Though the recommended power supply has all the necessary compliance marks, our Safety test lab insisted on reviewing the power supply schematics and bill of materials, which were not shared by the power supply manufacturer. The power supply must, therefore, be ordered separately.

The following Phihong USA power supplies have been tested by AlazarTech: PSAC60M-240, and PPL65U-240.

Please note that the ATSRM3801 power supply (order number RM3801-PWR-NA) purchased from AlazarTech will come with a type B plug. The included power cable is NEMA 5-15P to IEC 320-C5.

Customers who require a different power cord plug type are encouraged to source one of the above tested power supplies and/or a suitable power cord from an electronic component supplier.

Customers may opt to order the Phihong USA PPL65U-240 power supply along with the appropriate IEC 320-C13 power cable from their preferred electronic components supplier.

The power supplies specified above have undergone testing at our factory and are the recommended power supplies for ATSRM3801.

Extending the Life of your AlazarTech Digitizer

High temperatures can negatively impact computer components, potentially leading to component damage, performance issues, and shortened lifespan. Furthermore, heat can cause components to degrade, thus increasing the risk of failure.

Moving the AlazarTech digitizer outside of the host computer using the ATSRM3801 extends the life of your digitizer by removing it from the host computer's hot environment. Additionally, the ATSRM3801 model with enclosure (ATS-RM3801-001) is equipped with fans to provide cooling.

Note: The OEM model without enclosure does not include any fans for cooling; the OEM is responsible for providing thermal management.

RoHS Compliance

ATSRM3801 is fully RoHS compliant, as defined by Directive 2015/863/EU (RoHS 3) of the European Parliament and of the Council of 31 March 2015 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

All manufacturing is done using RoHS-compliant components and lead-free soldering.

REACH Compliance

AlazarTech verifies its supply chain against the latest REACH requirements. A compliance statement is usually available within 6 months of release of the European Chemicals Agency (ECHA) updated substance of very high concern (SVHC), Authorizations, and Restrictions lists.

EC Conformity

ATSRM3801 conforms to the following standards:

Electromagnetic Emissions:
CISPR 32:2015/AMD1:2019 / EN 55032:2015/A11:2020 (Class A):
Multimedia Equipment (MME) Radio disturbance characteristics. Limits and method of measurement: EN 61000-3-2:2014, EN 61000-3-3:2013.

Electromagnetic Immunity:
EN 55035:2017/A11:2020:
Multimedia Equipment (MME) Immunity characteristics. Limits and methods of measurement: EN 61000-4-2:2009, EN 61000-4-4:2012, EN 61000-4-5:2006, EN 61000-4-6:2009, EN 61000-4-11:2004.

Safety:
IEC 62368-1:2018/EN 62368-1:2020+A11:2020: Audio/video, information and communication technology equipment -Part 1: Safety requirements.

ATSRM3801 also follows the provisions of the following directives: 2014/35/EU (Low Voltage Equipment); 2014/30/EU (Electromagnetic Compatibility).

FCC & ICES-003 Compliance

ATSRM3801 has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15, subpart B of the FCC Rules, and the Canadian Interference-Causing Equipment Standard ICES-003 issue 7 October 2020.

System Requirements

Personal computer with at least one free x8 or x16 or open-ended PCI Express slot (must be Gen 3 [or higher] x8 slot to achieve full data throughput).

Power Requirements

Input voltage:	+20 V to +24 V
Voltage ripple:	240 mV$_{P-P}$, max
Current consumption:	
Without digitizer:	50 mA
With ATS9373-D6:	1.7 A

Power Connectors

Connector types:

DC (Barrel Plug)	2.1mm I.D. x 5.5mm O.D. x 9.5mm

Physical

Size

In enclosure:	245mm x 137mm x 85mm
OEM version:	227.66mm x 63.5mm

Weight

In enclosure:	602.6 g
OEM version:	77 g

Environmental

Operating temperature	0 to 55 degrees Celsius, ambient
Storage temperature	-20 to 70 degrees Celsius
Relative humidity	5 to 95%, non-condensing

Materials Supplied

ATSRM3801 with enclosure (ATS-RM3801-001):

- ATSRM3801 backplane with enclosure
- ATSP2C3x8 adapter
- Two (2) OCuLink cables

ATSRM3801-OEM without enclosure (ATS-RM3801-101):

- ATSRM3801 backplane only
- ATSP2C3x8 adapter
- Two (2) OCuLink cables

Certification and Compliances

RoHS 3 (Directive 2015/863/EU) Compliance

REACH Compliance

CE Marking — EC Conformity

FCC Part 15 Class A / ICES-003 Class A Compliance

All specifications are subject to change without notice

ORDERING INFORMATION

ATSRM3801 (with enclosure)	ATS-RM3801-001
ATSRM3801 (without enclosure)	ATS-RM3801-101
ATSRM3801: One Year Extended Warranty	ATS-RM3801-061
ATSRM3801: Power Supply and Power Cable	RM3801-PWR-NA

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